

## ABSTRACT

The present invention relates to stabilized supports stable at temperatures above 800 °C, and method of preparing such supports, which includes adding a rare earth metal to an aluminum-containing precursor prior to calcining. The present invention can be more specifically seen as a support, process and catalyst wherein the stabilized alumina catalyst support comprises a rare earth aluminate with a molar ratio of aluminum to rare earth metal greater than 5:1 and, optionally, an aluminum oxide. More particularly, the invention relates to the use of catalysts comprising rhodium, ruthenium, iridium, or combinations thereof, loaded onto said stabilized supports for the synthesis gas production via partial oxidation of light hydrocarbons, and further relates to gas-to-liquids conversion processes.